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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,191

04/07/2006

Shizuo Wada

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EXAMINER

KEE, FANNIE C

ART UNIT

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3679

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04/28/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/575,191	<b>Applicant(s)</b> WADA, SHIZUO	
	<b>Examiner</b> Fannie Kee	<b>Art Unit</b> 3679	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Oath/Declaration***

1. With regard to the typographical error in the oath noted by Examiner in the Non-Final Office Action mailed on 4/10/08 wherein the month of January was misspelled "Junuary", Applicant is correct that the Patent Office has no rules or regulations which require Applicant to correct their own typographical errors. Therefore, Applicant does not have to submit a new oath correcting this typographical error. It is therefore noted on the record that the oath has a typographical error which has been identified to be "January" in Applicant's remarks.

### ***Specification***

2. The abstract of the disclosure is objected to because Applicant either needs to remove all drawing elements or place these drawing elements in parenthesis. However, as Applicant has removed all of the other drawing element references, these should also be removed to maintain consistency in the abstract, i.e., "R" and "t" in line 6.

Note: Applicant should only submit one copy of the abstract with the marked up changes. Applicant should not submit both a marked-up copy and a clean copy.

Correction is required. See MPEP § 608.01(b).

***Claim Objections***

3. Claim 3 is objected to because of the following informalities: move the phrase “of a neck part” in line 3 to be after the words “flat surface” in line 2.

Correction is required.

4. Claim 7 is objected to because of the following informalities: move the phrase “of a neck part” in line 8 to be after the words “flat surface” in line 7.

Correction is required.

5. Claim 7 is also objected to because of the following informalities: replace the word “is” with --being-- in line 9.

Correction is required.

6. Claim 7 is further objected to because of the following informalities: replace the word “meets” with --meeting-- in line 9.

Correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

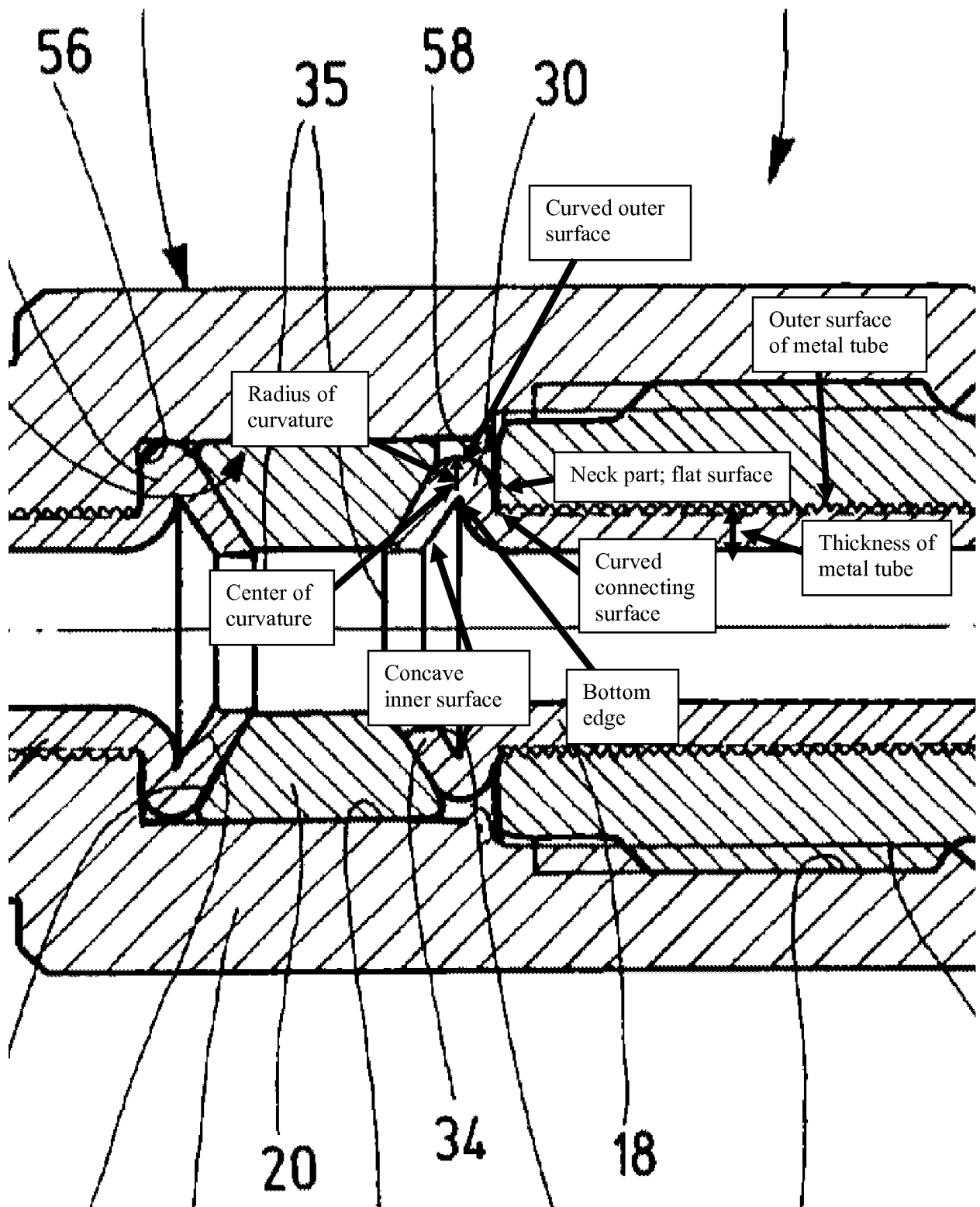
8. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Stahn et al  
European Patent Application No. EP 1,236,946 A1.

With regard to claim 1, and as seen in the figure below, Stahn et al disclose a flared end structure of a metal tube to be pressed against a seat formed in a member by tightening a coupling nut to the member, said flared end structure having a joining end part **(34)** to be pressed against the seat of the member, and a curved part **(30)** continuous with the joining end part;

wherein the curved part **(30)** has a curved outer surface with respect to the axis of the tube and a concave inner surface having a bottom edge, and

the curved outer surface has a radius R of curvature smaller than a wall thickness t of the metal tube so as to increase the rigidity of the flared end structure.

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With regard to claim 2, and as shown in the figure above, Stahn et al disclose a flared end structure of a metal tube to be pressed against a seat formed in a member by tightening a coupling nut to the member having a joining end part **(34)** to be pressed against the seat of the member, and a curved part **(30)** continuous with the joining end part;

wherein the curved part **(30)** has a curved outer surface with respect to the axis of the tube and a concave inner surface having a bottom edge, and

the curved outer surface has a center of curvature at a position on the radially outer side of the bottom edge of the concave inner surface with respect to the axis of the tube so as to increase a rigidity of the flared end structure.

With regard to claim 3, and as shown in the figure above, Stahn et al disclose the curved outer surface merging into a flat surface, on which a coupling nut exerts pressure, of a neck part, and the bottom edge of the concave inner surface is in a radial range corresponding to the flat surface of the neck part.

With regard to claim 4, and as shown in the figure above, Stahn et al disclose the flat surface of the neck part being perpendicular to the axis of the tube.

With regard to claim 5, and as shown in the figure above, Stahn et al disclose the flat surface of the neck part being connected to the outer surface of the metal tube by a curved connecting surface having a center of curvature at a position radially outside the metal tube, and

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the flat surface extends between the curved outer surface of the curved part and the curved connecting surface.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahn et al.

With regard to claim 6, Stahn et al disclose the claimed invention but do not disclose that  $0.8t \leq R \leq t$  where R is the radius of curvature and t is the thickness of the metal tube.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the flared end structure of a metal tube such that the radius of curvature and the wall thickness of the metal tube meet:  $0.8t \leq R \leq t$  because a change in the size of a prior art device is a design consideration within the skill of the art (In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955)) and because the optimization of proportions in a prior art device is a design consideration within the skill of the art (In re Reese, 290 F.2d 839, 129 USPQ 402 (CCPA 1961)).



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With regard to claim 9, Stahn et al disclose the claimed invention but do not expressly disclose that the tube has an outside diameter not smaller than 6 mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have fabricated the tube such that the tube has an outside diameter not smaller than 6 mm because a change in the size of a prior art device is a design consideration within the skill of the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955).

*Allowable Subject Matter*

11. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claim 7, the prior art of record does not teach or suggest a flared end structure of a metal tube a distance including a tolerance between a flat surface of a neck part and an end of a joining end part of the metal tube meeting the inequality:

$$L1 \leq L \leq L2$$

where

$$L1 = \{(D1 - D3)/2 + r\}/\tan(\alpha/2) + t/\sin(\alpha/2) + t$$

$$L2 = \{(D2 - D3)/2 - t\}/\tan(\alpha/2) + t/\sin(\alpha/2) + t$$

D 1: Outside diameter of the metal tube

D2: Outside diameter of the flared end structure

D3: Inside diameter of the end of the flared end structure

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r: Radius of curvature of the curved connecting surface

$\alpha$ : Cone angle of a cone containing the joining end part

t: Wall thickness of the tube

in combination with a joining end part pressed against a seat formed in a member by tightening a coupling nut to the member and a curved part continuous with the joining end part.

Claim 8 depends from claim 7 and would therefore be found allowable should claim 7 be found allowable.

### ***Response to Arguments***

12. Applicant's arguments filed 8/13/08 have been fully considered but they are not persuasive.

a. Applicant argues that Stahn et al do not teach or suggest the shape of a flared end structure as recited in claim 1 where the radius of curvature is smaller than the thickness of the metal tube which increases the rigidity of the flared end structure.

Examiner disagrees.

The shape of the flared end structure as claimed in claim 1 is inherent in Stahn et al because the metal tube does not change its size throughout the structure. Therefore, when the metal tube in Stahn et al is bent as a flared end structure, the radius of curvature will always be smaller than the thickness of the metal tube and the rigidity of the flared end structure is also automatically increased because of the bending of the tube. Any plastic deformation of a metal tube inherently increases the rigidity of the tube.

b. Applicant also argues that Stahn et al do not specifically define the relative sizes for each portion or element as claimed in claim 1.

Examiner agrees that Stahn et al do not specifically define the relative sizes for each portion or element as claimed in claim 1.

However, as noted above in paragraph (a), Stahn et al inherently contains the features and limitations upon which Applicant is relying. Also, while anticipation requires the disclosure of each and every limitation of the claim at issue in a single prior art reference, it does not require such disclosure *in haec verba*. In re Bode, 550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977). In addition, it does not require that the prior art reference "teach" what the application at issue teaches. Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983). Finally, Applicant is reminded that during examination claim limitations are to be given their broadest reasonable reading. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fannie Kee whose telephone number is (571) 272-1820. The examiner can normally be reached on 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron M Dunwoody/  
Primary Examiner, Art Unit 3679

/F. K./  
Examiner, Art Unit 3679

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April 27, 2009